

TABLE 1.1

NWW-2013-00126

Mitigation Plan Summary*Pend Oreille River Pipeline Stabilization Project*

Work Activity	Environmental Concern	Mitigation Measures
A. Upland Works – Description and Sequence		
1. Construction Site Preparation & Equipment Staging		
a. Location of Equipment	Surface and ground water quality - release of petroleum products; erosion and sedimentation into waters	<ul style="list-style-type: none"> Equipment and vehicles (except for the stationary crane) will be located no closer than 50 feet to the top of the bank and located as far upland as feasibly possible when not in use. Equipment matting will be placed on the ground within the existing right-of-way to protect the pipeline and decrease the potential for erosion. Stationary crane for hoisting rock skiffs will be located on an equipment mat no closer than 50 feet from the top of the bank. Each piece of equipment will be outfitted with a spill kit.
b. Equipment and Vehicle Traffic	Surface water quality - erosion and sedimentation of waters	<ul style="list-style-type: none"> Rock will be placed and maintained in working areas to reduce dust and mud tracking. The main access road into the work site will be maintained with a grader and additional rock material, as necessary.
c. Fueling - Equipment and Vehicles	Surface and ground water quality - release of petroleum products	<ul style="list-style-type: none"> A single fueling site for shore-based equipment will be established at least 200 feet upland from the river. Fuel supply tank will be stored in a secondary containment structure with a capacity of 125% of the stored fuel. Refueling nozzles will be of the automatic shut off type. A dedicated absorbent spill kit (12-gallon minimum) will be available at the fueling site. Refer to TransCanada's Spill Prevention, Control and Countermeasure Plan in Attachment G of the Joint Application for Permit.
d. Sanitary and Solid Waste Management Facilities	Surface and ground water quality - Bacterial contamination; solid waste.	<ul style="list-style-type: none"> Restrooms and waste/storage containers will be placed as far from the riverbank as possible. Restrooms will be routinely maintained and waste/storage containers will be emptied regularly.
e. Site control and access	Environmental, health, and safety concerns. Accidental releases of contaminants.	<ul style="list-style-type: none"> Site access will be tightly controlled. Visitors will be required to check in the site office and receive orientation training and wear proper Personal Protective Equipment (PPE) per TransCanada guidelines. Temporary fencing will be put up to control site access. Site signage will be posted to warn/direct visitors, workers and other foot/vehicular traffic.

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2. Material (rock) stockpiling	Surface water quality - erosion and sedimentation of waters	<ul style="list-style-type: none"> • Stockpile will be located in an upland area approximately 250 feet from the top of bank. • A dedicated silt fence will be installed downslope of the stockpile. The fence will be inspected on a daily basis and necessary repairs made per TransCanada's Best Management Practices included as Attachment G of the Joint Application for Permit.
3. Shoreline and river construction access structures	Riverbank disturbance; erosion and sedimentation of waters	<ul style="list-style-type: none"> • Temporary stairway and temporary pile supported floating dock installed for construction foot traffic. • Crane for transferring rock skiffs and equipment to barges will be located 30 feet or more from the top of bank on a dedicated equipment pad. • A perimeter silt fence will be installed at the bottom of the slope above the armored riverbank. The fence will be inspected on a daily basis and necessary repairs made per TransCanada's Best Management Practices included as Attachment G of the Joint Application for Permit.
4. Environmental Inspection and Monitoring	Erosion and sedimentation control; environmental permit compliance	<ul style="list-style-type: none"> • Inspections will be conducted within 24 hours of rainfall to record and correct any changes to erosion control and spill prevention measures. • A full-time Environmental Inspector will be assigned to the Project to be responsible for inspecting and monitoring environmental controls and permit compliance for the duration of the Project.
5. Upland Restoration Activities		
a. General site		<ul style="list-style-type: none"> • Disturbed areas will be graded to pre-construction conditions and a certified weed-free seed mix sourced from a local business or U.S. Department of Agriculture Natural Resource Conservation Service or Department of Soil and Water District office will be applied.
b. Access Roads		<ul style="list-style-type: none"> • Rock laid down as bedding for equipment and vehicle movement will be removed.
c. Bank areas		<ul style="list-style-type: none"> • All pile supported or anchored structures such as stairs or catwalks will be removed upon completion of the project and disturbed areas will be returned to previous grade and reseeded.

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B. On-Water Works Description and Sequence		
1. Vessels and Equipment		
a. Vessel traffic and mooring	Environmental, health, and safety. Accidental releases of fill or contaminants from construction vessels.	<ul style="list-style-type: none"> No Wake Zone to be established. Orange and white buoys will be deployed to delineate the No Wake Zone in accordance with U.S. Coast Guard regulations of Private Aids to Navigation (PATON). Boating safety signage to alert boats to stay back 200 feet.
a. Vessel traffic and mooring (cont.)	Environmental, health, and safety. Accidental releases of fill or contaminants from construction vessels (cont.).	<ul style="list-style-type: none"> Moored barges will be lighted at night in accordance with maritime safety standards. The spill boat will be moored to one of the barges and the support boat will be anchored/beached near shore. Request for project information to be included in the U.S. Coast Guard Local Notice to Mariners for Idaho waters. The Bonner County Sheriff's Department will be notified of operations on the river prior to the commencement of on-water work. All vessels will be maintained in good, clean working condition and be equipped with lighting and other navigational safety equipment per federal regulations. All vessels will be required to carry a current sticker from the State of Idaho indicating it has undergone inspection for aquatic invasive species.
b. Fueling of vessels and onboard equipment	Surface water quality impacts - release of petroleum products into the river.	<ul style="list-style-type: none"> The Project will develop and keep onboard construction vessels an applicable Spill Prevention, Countermeasure, and Contingency Plan. TransCanada and its marine contractor will develop a critical area refueling plan to direct fueling of the crane at the riverbank, vessels, and onboard equipment. TransCanada and/or its marine contractor will provide this upon request. Bulk fuel storage will be in secondary containment on barges at all times. Adequate containment booms and a dedicated spill boat will be on hand for the duration of on-water construction activities. The safety/spill response boat and crew support boat will be fueled at established commercial fueling docks in the area. All vessels will be supplied with spill kits. Supplemental spill supplies (e.g. pads and booms) will be kept on hand in storage on the upland work site.

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c. Pile Driving (Spud barge piles; temporary shoreline structures, temporary moorings)	Acoustical impacts to aquatic life.	<ul style="list-style-type: none"> • The pile drive hammer will be cushioned by wood between the follower and piles. • An air bubbler (bubble curtain) will be used to reduce the transmission of impact pulses underwater.
2. Material Handling and Placement		
a. Shore-to-barge transfer of fill	Surface water quality; incidental release of fill (stone); turbidity	<ul style="list-style-type: none"> • Stone will be loaded into rock skiffs on land with an excavator and hoisted by crane to transfer barges.
b. Supply of fill to placement barge	Surface water quality; incidental release of fill (stone); turbidity	<ul style="list-style-type: none"> • Transfer barges (2 - 3) will transport laden and unladen rock skiffs to/from the placement barge. • Transfer barges will be equipped with sides/toe boards to prevent the incidental release of fill material.
c. Transfer of fill to placement barge	Surface water quality; incidental release of fill (stone); turbidity	<ul style="list-style-type: none"> • An excavator will scoop fill material from the rock skiffs and load the rock funnel/tremie assembly.
d. Placement of fill in Pend Oreille River	Surface water quality; incidental release of fill (stone); turbidity	<ul style="list-style-type: none"> • A rock funnel with tremie pipe will carry/direct the fill material through the water column to the river bottom. • Divers, underwater lighting, and cameras will guide the placement of the fill at the pipelines.
e. Sanitary and solid waste management	Surface water quality - Bacterial contamination; solid waste.	<ul style="list-style-type: none"> • The placement barge will have an adequate number of portable restrooms for the number of construction crewmembers. The portable restrooms will be securely fastened to the deck of the placement barge. • Storage and waste containers will be aboard the barges and other vessels for solid waste and to prevent incidental releases of materials overboard. • No pump-outs or discharge of sanitary facilities from vessels will be allowed. • Restrooms will be routinely maintained and waste/storage containers will be emptied regularly.